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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,985	12/18/2001	Quanyuan Shang	AMAT/5162/DISPLAY/AKT/BG	4811

32588 7590 08/11/2004

APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER

CROWELL, ANNA M

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,985

Applicant(s)

SHANG ET AL.

Examiner

Michelle Crowell

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-21 and 38-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-21 and 38-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date May 21, 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. Portions of the information disclosure statement filed May 30, 2002 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been listed in the application file, but the information referred to therein has not been considered. In the IDS of 05-30-02 under other art, a copy of the Lee et al. reference (C24) is omitted.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-6, 8-21, and 38-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 2, 12, 13, 38, and 39 require "glass substrate". The specification fails to disclose this feature. On page 7, paragraph [0020], the specification teaches a substrate 28; however, fails to teach that the substrate 28 is made of glass.

Claims 1, 10, and 12 require a “ glass support surface”. The specification fails to disclose this feature. On page 7, paragraph [0022], the specification teaches a support surface 31; however, fails to teach the support surface 31 is made of glass. In addition, the specification supports that the thermally insulating layer 50 can be made of glass.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson et al. (U.S. 5,380,566) in view of Sato et al. (U.S. 5,296,037).

Referring to Figure 1 and column 3, lines 18-column 4, line 9, Robertson et al. discloses an apparatus for material deposition on a glass substrate (col. 2, lines 29-30), comprising: a chamber 12 (col. 3, lines 21-22); a process gas distribution assembly 34 within the chamber 12

(col. 3, lines 49-53); a power source 36 coupled to the chamber for establishing a plasma (col. 4, lines 3-8); and a movable substrate support member 18 within the chamber having a support surface thereon and the support surface comprising a thermally insulating layer on the support surface to support a substrate 38 thereon (col. 3, lines 29-36).

Robertson et al. fails to teach a glass support surface.

Referring to column 2, lines 46-49, and column 4, lines 51-52, column 6, lines 50-61, Sato et al. teaches the use of a glass substrate support 20 to reduce film formation stress and prevent the support from deterioration. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the substrate support of Robertson et al. to be made of glass as taught by Sato et al. since this would reduce film formation stress and prevent the support from deterioration.

With respect to the glass substrate, it should be noted that Robertson et al. discloses a glass substrate; however, it is not given patentable weight in apparatus claims. According to the MPEP 2115, the “inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims.” In re Young, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

With respect to claim 5, the apparatus includes the thermally insulating layer is formed on the support surface 18 (col.3, lines 29-30).

With respect to claim 6, the apparatus includes the thermally insulating layer being selected from aluminum oxide (col.3, lines 29-30).

7. Claims 1, 5, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037).

Referring to Drawing 1 and paragraphs [0009]-[0017], Matsuda et al. discloses an apparatus for material deposition on a substrate, comprising: a chamber 1; a process gas distribution assembly within the chamber (par. [0009]); a power source 9 coupled to the chamber for establishing a plasma (par. [0013]); and a movable substrate support member 3, 8 within the chamber having a support surface thereon, the support surface comprising a thermally insulating layer 5 on the support surface to support a substrate 6 thereon (par. [0012], [0017]).

Matsuda et al. fails to teach a glass support surface.

Referring to column 2, lines 46-49, and column 4, lines 51-52, column 6, lines 50-61, Sato et al. teaches the use of a glass substrate support 20 to reduce film formation stress and prevent the support from deterioration. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the substrate support of Matsuda et al. to be made of glass as taught by Sato et al. since this would reduce film formation stress and prevent the support from deterioration.

With respect to the glass substrate, the type of substrate processed in apparatus claims is not given patentable weight. According to the MPEP 2115, the “inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims.” In re Young, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). Furthermore, the apparatus of Matsuda et al. in view of Sato et al. is capable of providing a glass substrate.

With respect to claim 5, the apparatus includes the insulating layer 5 is formed on the

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support surface 3 (Drawing 1 and 9, par. [0011]).

With respect to claim 10, the apparatus further includes a frame 13 to hold the insulating layer on the supporting surface of the support member (Drawing 1).

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) as applied to claims 1, 5, and 10 above, and further in view of Moslehi et al. (US 5,796,261).

The teachings of Matsuda et al. in view of Sato et al. have been discussed above.

Matsuda et al. in view of Sato et al. fails to teach a gas dispersion plate with a heat reflective surface.

Referring to column 6, lines 26-32, Moslehi teaches a gas dispersion plate 30 with a heat reflective surface, since a reflective surface eliminates pattern effects on temperature uniformity. In addition, it is well known in the art to use a gas dispersion plate to uniformly distribute process gases. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus of Matsuda et al. in view of Sato et al. with the gas dispersion plate 30 with a reflective surface in order to eliminate pattern effects on temperature uniformity and uniformly distribute process gases.

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) as applied to claims 1, 5, and 10 above, and further in view of Kurono et al. (US 5,779,803).

The teachings of Matsuda et al. in view of Sato et al. have been discussed above.

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Matsuda et al. in view of Sato et al. fails to teach a heater.

Referring to column 3, lines 25-30, Kurono et al. teaches it is well known to include a heater 8 in a substrate support member 4 in order to achieve the desired temperature to yield optimum processing conditions. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the substrate support member of Matsuda et al. in view of Sato et al. with a heater as taught by Kurono et al. since this would achieve the desired temperature to yield optimum processing conditions.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) as applied to claims 1, 5, and 10 above, and further in view of Robles et al. (U.S. 6,035,803) and Dornfest et al. (U.S. 5,680,013).

The teachings of Matsuda et al. in view of Sato et al. have been discussed above.

Matsuda et al. in view of Sato et al. fails to teach a thermally insulating layer of aluminum nitride.

Referring to column 4, lines 13-14 of Robles et al. and column 4, lines 21-65 of Dornfest et al., Robles et al. and Dornfest et al. teach the use of a thermally insulating layer comprising aluminum nitride on a substrate support member. Aluminum nitride is a well known protective material used to prevent corrosion and exhibits good thermal shock resistance, good thermal conductivity, and good dielectric properties. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the support surface of Matsuda et al. in view of Sato et al. with an aluminum nitride layer as taught by Robles et al. and Dornfest et

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al. since it is a well known protective material used to prevent corrosion and exhibits good thermal shock resistance, good thermal conductivity, and good dielectric properties.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) as applied to claims 1, 5, and 10 above, and further in view of Robertson et al. (U.S. 5,549,780) and Dean et al. (US 4,473,455).

The teachings of Matsuda et al. in view of Sato et al. have been discussed above.

Matsuda et al. in view of Sato et al. fail to teach a thermally insulating layer of aluminum oxide.

Referring to column 3, lines 29-30 of Robertson et al. and column 3, lines 52-65 of Dean et al, Robertson et al. and Dean et al. teach that it is well known in the art to apply a thermally insulating layer of aluminum oxide to a substrate support surface in order to reduce contamination of the substrate during processing. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the support surface of Matsuda et al. in view of Sato et al. with aluminum oxide as taught by Robertson et al. and Dean et al. since this would reduce contamination of the substrate during processing.

12. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) as applied to claims 1, 5, and 10 above, and further in view of Arai et al. (U.S. 5,203,958).

The teachings of Matsuda et al. in view of Sato et al. have been discussed above.

Matsuda et al. in view of Sato et al. fail to teach the thermally insulating layer is adhesively bonded to the support surface.

Referring to column 3, lines 30-35, Arai et al. teaches an insulating layer 5 which is adhesively bonded to the support surface 2. Adhesive bonding is a known method for adhering and securing the thermally insulating layer to the support surface. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to adhesively bond the insulating layer to the support surface of Matsuda et al. in view of Sato et al. as taught by Arai et al. since this is a known method of adhering and securing an insulating layer to a support surface.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) as applied to claims 1, 5, and 10 above, and further in view of Tsubone et al. (U.S. 5,673,750).

The teachings of Matsuda et al. in view of Sato et al. have been discussed above.

Matsuda et al. in view of Sato et al. fail to teach the frame base adapted to contact the thermally insulating layer.

Referring to Figure 1 and column 3, lines 48-50, Tsubone et al. teaches a processing apparatus wherein the frame base 8 is adapted to contact the insulating layer 7 to cover the insulating layer and prevent deterioration from plasma. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for the frame base of Matsuda et al. in view of Sato et al. to be adapted to contact the insulating layer as taught by Tsubone in order to cover the insulating layer and prevent deterioration from plasma.

14. Claims 12, 14, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) as applied to claims 1, 5, and 10 above, and further in view of White et al. (U.S. 5,352,294).

The teachings of Matsuda et al. in view of Sato et al. have been discussed above.

Matsuda et al. in view of Sato et al. to teach a frame raised by the movable substrate support.

Referring to Figures 3 and 10, and column 5, lines 55-67, White et al. teaches a processing apparatus wherein a frame 40 is raised by the movable substrate support 113 (col. 4, lines 15-21). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to raise the frame of Matsuda et al. in view of Sato et al. with the movable substrate support as taught by White et al. since integrating the function of raising the frame and the substrate support is merely a matter of obvious engineering design choice which would reduce the apparatus' footprint.

Matsuda et al. fails to teach a heater.

Referring to column 4, lines 15-17, White et al. teaches it is well known to include a heater in a substrate support member 4 in order to achieve the desired temperature to yield optimum processing conditions. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the substrate support member of Matsuda et al. in view of Sato et al. with a heater as taught by White et al. since this would achieve the desired temperature to yield optimum processing conditions.

With respect to claim 17, Matsuda et al. discloses the frame 13 when placed in a processing position is positioned proximate the chamber sidewalls 1 to minimize plasma leakage between the sidewalls and the frame during processing (Drawing 1).

With respect to claim 18, Matsuda et al. discloses the frame 13 is positioned adjacent a plurality of chamber sidewalls such that a gap is formed to prevent arcing between the frame and the chamber sidewalls (Drawing 1).

15. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) and White et al. (U.S. 5,352,294) as applied to claims 12, 14, 17, and 18 above, and further in view of Moslehi et al. (US 5,796,261).

The teachings of Matsuda et al. in view of Sato et al. and White et al. have been discussed above.

Matsuda et al. in view of Sato et al. and White et al. fail to teach a gas dispersion plate with a heat reflective surface.

Referring to column 6, lines 26-32, Moslehi et al. teaches a gas dispersion plate 30 with a heat reflective surface, since a reflective surface eliminates pattern effects on temperature uniformity. In addition, it is well known in the art to use a gas dispersion plate to uniformly distribute process gases. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus of Matsuda et al. in view of Sato et al. and White et al. with the gas dispersion plate with a reflective surface of Moslehi et al. in order to eliminate pattern effects on temperature uniformity and uniformly distribute process gases.

16. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) and White et al. (U.S. 5,352,294) as applied to claims 12, 14, 17, and 18 above, and further in view of Robles et al. (U.S. 6,035,803) and Dornfest et al. (U.S. 5,680,013).

The teachings of Matsuda et al. in view of Sato et al. and White et al. have been discussed above.

Matsuda et al. in view of Sato et al. and White et al. fails to teach a thermally insulating layer of aluminum nitride.

Referring to column 4, lines 13-14 of Robles et al. and column 4, lines 21-65 of Dornfest et al., Robles et al. and Dornfest et al. teach the use of a thermally insulating layer comprising aluminum nitride on a substrate support member. Aluminum nitride is a well known protective material used to prevent corrosion and exhibits good thermal shock resistance, good thermal conductivity, and good dielectric properties. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the support surface of Matsuda et al. in view of Sato et al. and White et al. with an aluminum nitride layer as taught by Robles et al. and Dornfest et al. since it is a well known protective material used to prevent corrosion and exhibits good thermal shock resistance, good thermal conductivity, and good dielectric properties.

17. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) and White et al. (U.S. 5,352,294) as applied to claims 12, 14, 17, and 18 above, and further in view of

Robertson et al. (U.S. 5,549,780) and Dean et al. (US 4,473,455).

The teachings of Matsuda et al. in view of Sato et al. and White et al. have been discussed above.

Matsuda et al. in view of Sato et al. and White et al. fail to teach a thermally insulating layer of aluminum oxide.

Referring to column 3, lines 29-30 of Robertson et al. and column 3, lines 52-65 of Dean et al, Robertson et al. and Dean et al. teach that it is well known in the art to apply a thermally insulating layer of aluminum oxide to a substrate support surface in order to reduce contamination of the substrate during processing. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the support surface of Matsuda et al. in view of Sato et al. and White et al. with aluminum oxide as taught by Robertson et al. and Dean et al. since this would reduce contamination of the substrate during processing

18. Claims 19, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) and White et al. (U.S. 5,352,294) as applied to claims 12, 14, 17, and 18 above, and further in view of Tsubone et al. (U.S. 5,673,750).

The teachings of Matsuda et al. in view of Sato et al. and White et al. have been discussed above.

Matsuda et al. in view of Sato et al. and White et al. fail to teach a frame base adapted to contact the insulating layer and not the glass substrate.

Referring to Figure 1 and column 3, lines 48-50, Tsubone et al. teaches a processing

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apparatus wherein the frame base 8 is adapted to contact the insulating layer 7 to cover the insulating layer and prevent deterioration from plasma. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for the frame base of Matsuda et al. in view of Sato et al. and White et al. to be adapted to contact the insulating layer and not the glass substrate as taught by Tsubone in order to cover the insulating layer and prevent deterioration from plasma.

19. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037).

The teachings of Matsuda et al. in view of Sato et al. have been discussed above. Matsuda et al. in view of Sato et al. fails to teach that the thermally insulating layer comprises at least a first sheet and a second sheet bonded together to form a unified body; however, it is obvious to bond multiple sheets to form a unified body since this would generate a more durable insulating layer. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for the insulating layer of Matsuda et al. in view of Sato et al. to include a first sheet and a second sheet bonded together to form a unified body since this would generate a more durable insulating layer.

20. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037) and White et al. (U.S. 5,352,294) as applied to claims 12, 14, 17, and 18 above.

The teachings of Matsuda et al. in view of Sato et al. and White et al. have been discussed above.

Matsuda et al. in view of Sato et al. and White et al. fails to teach that the thermally insulating layer comprises at least a first sheet and a second sheet bonded together to form a unified body; however, it is obvious to bond multiple sheets to form a unified body since this would generate a more durable insulating layer. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for the insulating layer of Matsuda et al. in view of Sato et al. to include a first sheet and a second sheet bonded together to form a unified body since this would generate a more durable insulating layer.

21. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. (Japanese Patent Publication 08-181113A) in view of Sato et al. (U.S. 5,296,037), White et al. (U.S. 5,352,294), and Tsubone et al. (U.S. 5,673,750) as applied to claim 19 above.

The teachings of Matsuda et al. in view of Sato et al., White et al., and Tsubone et al. have been discussed above.

Matsuda et al. in view of Sato et al., White et al., and Tsubone et al. fail to teach that the longitudinal portion of the frame is rounded; however, the shape of the claimed frame is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular shape of the claimed frame was significant.

Response to Arguments

22. Applicant's arguments with respect to the Kurono et al., glass support surface and glass substrate, claims 2, 6, 11 have been considered but are moot in view of the new ground(s) of rejection.

23. Applicant has argued that Matsuda does not disclose a process gas distribution assembly since distribute is defined as "to divide and dispense in portions". It should be noted that office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In the instant application, as broadly claimed, a process gas distribution assembly simply must dispense, give out, or deliver (broad definition of distribute) a gas to the chamber. The type of process gas distribution assembly, such as gas dispersion plate, which divides and dispenses the gases into portions has not yet been claimed in claim 1.

24. Applicant has argued that Matsuda et al. teaches away from modifying the apparatus by bonding the insulating layer to support surface. However, it is well known in the art to bond a protective layer as an alternative since it provides the benefit of adhering and securing a thermally insulating layer to support surface.

25. Applicant has argued that the frame raised by the movable substrate support of Matsuda et al. in view of White et al. would not reduce the footprint of the apparatus; however, it's obvious to integrate the substrate support member elevating device with the frame elevating device of White et al. because by having one elevating device that moves both the frame and the substrate support member, the footprint of the apparatus would be reduced since one elevating device is being used instead of two elevating devices.

Conclusion

26. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Crowell whose telephone number is (571) 272-1432. The examiner can normally be reached on M-F (9:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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08-04-04

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